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EXAMINER

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Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 28

Application Number: 09/289,507  
Filing Date: April 09, 1999  
Appellant(s): DRZAIC ET AL.

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John D. Lanza  
For Appellant

**MAILED**  
**APR 07 2003**  
**Technology Center 2600**

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed on January 21, 2003.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

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**(3) Status of Claims**

The statement of the status of the claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Invention**

The summary of invention contained in the brief is correct.

**(6) Issues**

The appellant's statement of the issues in the brief is correct.

**(7) Grouping of Claims**

Appellant's brief includes a statement that claims 38-40, 42, 51, 54-65 and 68-79 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

5,961,804	JACOBSON ET AL.	10-1999
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**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following features must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

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Regarding to claim 40, when this claim is read together with claims 39 and 38, claim 40 recites a first capsule including white particles and black particles and a second capsule including black particles and a third plurality of particles having a second property visually different from white and black, so that there is no drawing illustrated for the invention as recited in claim 40 (see the 112, first paragraph rejection below).

Regarding to claim 63, when this claim is read together with claim 62, claim 63 recites a first capsule including white particles and red particles and a second capsule including green particles and blue particles, so that there is no drawing illustrated for the invention as recited in claim 63 (see the 112, first paragraph rejection below).

Regarding to claim 64, when this claim is read together with claim 62, claim 63 recites a first capsule including white particles and yellow particles and a second capsule including cyan particles and magenta particles, so that there is no drawing illustrated for the invention as recited in claim 64 (see the 112, first paragraph rejection below).

Regarding to claim 68, when this claim is read together with claims 65 and 62, claim 68 recites a first capsule including white particles and black particles, a second capsule including third particles having a second optical property visually different from white and black and fourth particles having a third optical property, and a third capsule including fifth particles having a fourth optical property and black particles, so that there is no drawing illustrated for the invention as recited in claim 68 (see the 112, first paragraph rejection below).

**A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.**

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2. Claims 40, 63, 64 and 68 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding to claim 40, when this claim is read together with claims 39 and 38, claim 40 recites **a first capsule including white particles and black particles and a second capsule including black particles and a third plurality of particles having a second property visually different from white and black.** In other words, the disclosure, when filed, does not describe in detail the claimed underlined features above, in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The disclosure, group I as illustrated in figures 1-3E and the corresponding description, discloses several embodiments in which each of capsules including only one type of particles (50) such as white or black or other color particles. The disclosure, group II as illustrated in figures 3E-3L and the corresponding description, discloses several embodiments in which each of capsules including two types of particles, one being white and another being red or green or blue. The disclosure, group III as illustrated in figure 3M and the corresponding description, discloses an embodiment in which each of capsules including three types of particles, one being white, one being red and another being cyan. The disclosure, group IV as illustrated in figures 5-8 and the corresponding description, discloses several embodiments in which each of capsules including three types of particles, one being red, one being green and another being blue. However, the disclosure does not contain such description and details a display element corresponding to the combination of groups I and II in the manner as recited in

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claim 40, so as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Also see the corresponding drawing objection above.

Regarding to claim 63, when this claim is read together with claim 62, claim 63 recites **a first capsule including white particles and red particles and a second capsule including green particles and blue particles**. In other words, the disclosure, when filed, does not describe in details the claimed underlined features above, in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The disclosure, group I as illustrated in figures 1-3E and the corresponding description, discloses several embodiments in which each of capsules including only one type of particles (50) such as white or black or other color particles. The disclosure, group II as illustrated in figures 3E-3L and the corresponding description, discloses several embodiments in which each of capsules including two types of particles, one being white and another being red or green or blue. The disclosure, group III as illustrated in figure 3M and the corresponding description, discloses an embodiment in which each of capsules including three types of particles, one being white, one being red and another being cyan. The disclosure, group IV as illustrated in figures 5-8 and the corresponding description, discloses several embodiments in which each of capsules including three types of particles, one being red, one being green and another being blue. However, the disclosure does not contain such description and details a display element corresponding to the combination of groups II and IV in the manner as recited in claim above, so as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Also see the corresponding drawing objection above.

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Regarding to claim 64, when this claim is read together with claim 62, claim 63 recites a first capsule including white particles and yellow particles and a second capsule including cyan particles and magenta particles. In other words, the disclosure, when filed, does not describe in details the claimed underlined features above, in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The disclosure, group I as illustrated in figures 1-3E and the corresponding description, discloses several embodiments in which each of capsules including only one type of particles (50) such as white or black or other color particles. The disclosure, group II as illustrated in figures 3E-3L and the corresponding description, discloses several embodiments in which each of capsules including two types of particles, one being white and another being red or green or blue. The disclosure, group III as illustrated in figure 3M and the corresponding description, discloses an embodiment in which each of capsules including three types of particles, one being white, one being red and another being cyan. The disclosure, group IV as illustrated in figures 5-8 and the corresponding description, discloses several embodiments in which each of capsules including three types of particles, one being red, one being green and another being blue. However, the disclosure does not contain such description and details a display element corresponding to the combination of groups II and IV in the manner as recited in claim above, so as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Also see the corresponding drawing objection above.

Regarding to claim 68, when this claim is read together with claims 62 and 65, claim 68 recites a first capsule including white particles and black particles, a second capsule

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**including third particles having a second optical property visually different from white**

**and black and fourth particles having a third optical property, and a third capsule**

**including fifth particles having a fourth optical property and black particles.** In other words,

the disclosure, when filed, does not describe in details the claimed underlined features above, in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The disclosure, group I as illustrated in figures 1-3E and the corresponding description, discloses several embodiments in which each of capsules including only one type of particles (50) such as white or black or other color particles. The disclosure, group II as illustrated in figures 3E-3L and the corresponding description, discloses several embodiments in which each of capsules including two types of particles, one being white and another being red or green or blue. The disclosure, group III as illustrated in figure 3M and the corresponding description, discloses an embodiment in which each of capsules including three types of particles, one being white, one being red and another being cyan. The disclosure, group IV as illustrated in figures 5-8 and the corresponding description, discloses several embodiments in which each of capsules including three types of particles, one being red, one being green and another being blue. However, the disclosure does not contain such description and details a display element corresponding to the combination of groups I and II in the manner as recited in claim above, so as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Also see the corresponding drawing objection above.



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3. Claim 41 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim above, when this claim is read together with independent claim 38, it recites two contrary limitations, “a second optical property visually different from white” (see claim 38, lines 4-5) and “the second optical property has a white visual appearance”, so that it is not clear which limitation the Applicant means in claim above.

4. Claims 38-42, 51, 54-65 and 68-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson et al. (USPN: 5,961,804), hereinafter Jacobson.

As per claims 38-42, 51, 61-65, 68-71 and 75, Jacobson discloses a display apparatus comprising an electrophoretic display element which comprises a plurality of same microcapsules (microcapsules or oil drops (150), col. 3, lines 66-67), corresponding to the claimed first, second and third capsules, each microcapsule (see fig. 2B) comprising a plurality of white microparticles (400) (corresponding to the claimed plurality of white particles) and a plurality of black microparticles (410); and a plurality of electrodes (electrodes 300, 310) adjacent the display element (fig. 4E), the display element presents a visual display in response to the application of an electrical to the microcapsule (col. 9, lines 3-9), and a white visual display is provided by at least the first plurality of white particles (400) (see fig. 4E and the accompanying text). Jacobson further teaches another embodiment in which each of microcapsule (320) includes three different types of plurality of particles (particles 410, 610 and 620) and one type of a plurality of particles includes retroreflective glass spheres (620) for enhancing the brightness of a pixel (see fig. 6A, col. 12, lines 11-17). It would have been obvious

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to one skilled in the art to provide a plurality of the retroreflective glass spheres (620) in the microcapsules as shown in figure 2B because this would enhance the brightness of a pixel, as taught by Jacobson (col. 12, lines 11-17). Accordingly, the combination of the two embodiments discussed above would produce each of the first, second and third microcapsules comprising a plurality of white microparticles (400), a plurality of black microparticles (410) and a plurality of retroreflective particles (620).

Furthermore, Jacobson discloses that the particles may be heterogeneous in terms of physical properties and/or colors of the displays (col. 3, lines 14-17). In this particular cases, the selection of the particular colors of the microparticles would have been an obvious matter of design choice, since such a modification would have involved a mere change in color of one type of microparticles, which depends upon on the characteristics of the display being used in a particular application, e.g., a black and white display, a red and white display, a green and white display, or etc.. Therefore, it would have been obvious to obtain the invention as specified in claims above.

Regarding to claims 54-56 and 72-74, Jacobson teaches the microcapsules further including the suspending fluid being substantially clear (col. 8, lines 35-36) or dyed (col. 12, line 62).

Regarding to claims 57, 58, 76 and 77, as noting in figure 6A and col. 12, lines 5-17, Jacobson only discloses a single color subpixel. However, in a full-color RGB display, each image pixel including three subpixels, one being a red subpixel, one being a blue subpixel and another being a green subpixel is known to one skilled in the art at the time of the invention.

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Accordingly, one skilled in the art would recognize that Jacobson discloses three different types of capsules in a full-color RGB display, each capsule corresponding to a color subpixel.

Regarding to claims 59 and 78, Jacobson further teaches three different sizes of electrodes (540) (see fig. 5B).

Regarding to claims 60 and 79, Jacobson further teaches that the front electrode (300) should be transparent and the rear electrode (310) may be selective (col. 2, lines 24-26, col. 8, lines 51-53). In other words, one skilled in the art would recognize that Jacobson discloses the claimed invention as specified in claims above.

***(11) Response to Argument***

Regarding to the rejection of claims 40 and 68 under 35 USC 112, first paragraph, Appellants state that the originally filed specification teaches and enables the skilled artisan to make and use the subject matter defined by claims 40 and 68, pages 5-7 of the appeal brief. The examiner disagrees with that because (i) since there is no such drawing to illustrate the claimed features (see the drawing objection above), there is no detailed corresponding description, and (ii) Appellants indicate several places in different embodiments to support for the claimed features. However, there is no teaching the combination of two or more embodiments to arrive the invention of claims above. For example, the specification at page 5, lines 18-26, as indicated by Appellants, discloses at least four different embodiments.

Regarding to the rejection of claims 63 and 64 under 35 USC 112, first paragraph, Appellants state that the originally filed specification teaches and enables the skilled artisan to make and use the subject matter defined by claims 63 and 64, pages 7-9 of the appeal brief. The examiner disagrees with that because (i) since there is no such drawing to illustrate the claimed

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features (see the drawing objection above), there is no detailed corresponding description, and (ii) Appellants indicate several places in different embodiments to support for the claimed features. However, there is no teaching the combination of two or more embodiments to arrive the invention of claims above. For example, the specification at page 13, lines 3-11, page 5, lines 18-28 and page 6, lines 1-23, as indicated by Appellants, discloses at least four different embodiments.

Regarding to the rejections of claims 38-40, 42, 51, 54-56, 61, 62, 65 and 68-75 under 35 USC 103(a) over Jacobson, Appellants state that Jacobson does not provide the requisite motivation to combine two separate embodiments to come up with the limitations recited in the present claims, pages 10-11 of the appeal brief. The examiner disagrees with that because as mentioned in the rejection above, the motivation for providing retroreflective particles in the microcapsule of the embodiment as illustrated in fig. 2B, is to enhance the brightness of a pixel, as implicitly taught by Jacobson at col. 12, lines 11-17. Furthermore, Appellants state that Jacobson does not provide a reasonable expectation that such a modification will be successful and in fact discourages such a modification, page 12 of the appeal brief. The examiner disagrees with that because (i) as mentioned in the rejection above, Jacobson further teaches that the particles may be heterogeneous in terms of physical properties and/or colors of the displays (see col. 3, lines 14-17), and (ii) the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21

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USPQ2d 1941 (Fed. Cir. 1992). In the instant case, it is not necessary that the Jacobson reference actually suggests expressly or in so many words, the exact colored particles has been used in the invention of the claims above, because the selection of the particular colors of the microparticles would have been an obvious matter of design choice, since such a modification would have involved a mere change in color of one type of microparticles, which depends upon on the characteristics of the display being used in a particular application, e.g., a black and white display, a red and white display, a green and white display, or etc..

Regarding to the rejections of claims 63 and 64 under 35 USC 103(a) over Jacobson, Appellants state that Jacobson does not provide the requisite motivation to substitute any particular color in one of its full-color display, pages 12-13 of the appeal brief. The examiner disagrees with that because (i) as mentioned in the rejection above, Jacobson further teaches that the particles may be heterogeneous in terms of physical properties and/or colors of the displays (see col. 3, lines 14-17), and (ii) the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In the instant case, it is not necessary that the Jacobson reference actually suggests expressly or in so many words, the exact colored particles has been used in the invention of the claims above, because the selection of the particular colors of the microparticles would have been an obvious matter of design choice, since such a modification would have involved a mere change in color of one type of microparticles, which depends upon

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on the characteristics of the display being used in a particular application, e.g., a black and white display, a red and white display, a green and white display, or etc..

Regarding to the rejections of claims 59 and 78 under 35 USC 103(a) over Jacobson, Appellants state that Jacobson fails to disclose at least one electrode of a plurality of electrodes has a size different from others of the plurality of electrodes, pages 13-14 of the appeal brief. The examiner disagrees with that because Jacobson implicitly teaches three different sizes of electrodes (540), as illustrated in fig. 5B.

Regarding to the rejections of claims 60 and 79 under 35 USC 103(a) over Jacobson, Appellants state that Jacobson fails to disclose at least one of the electrodes has a color different from others, pages 14-15 of the appeal brief. The examiner disagrees because Jacobson further teaches that one of two electrodes, i.e., the front electrode is required to be transparent (col. 2, lines 24-26), and the front electrode (300) should be transparent and the rear electrode (310) may be selective (col. 8, lines 51-53). In other words, one skilled in the art would recognize that Jacobson discloses the claimed underlined feature above.

Regarding to the rejections of claims 57, 58, 76 and 77 under 35 USC 103(a) over Jacobson, Appellants state that Jacobson fails to teach or suggest different types of capsules adjacent at least one electrode, page 15 of the appeal brief. The examiner disagrees because as discussed more in detail above, as noting in figure 6A and col. 12, lines 5-17, Jacobson only discloses a single color subpixel. However, in a full-color RGB display, each image pixel including three subpixels, one being a red subpixel, one being a blue subpixel and another being a green subpixel is known to one skilled in the art at the time of the invention. Accordingly, one

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skilled in the art would recognize that Jacobson discloses three different types of capsules in a full-color RGB display, each capsule corresponding to a color subpixel.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Jimmy Nguyen


JHN  
March 31, 2003

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